diagnoses of injury, fracture ranked the first (47.1%), followed by TBI (33.8%). Regarding the types of traffic accident, most of the hospitalizations (74.6%) were collisions with vehicles involving cars or motorcycles. Patients who aged more than 65 years old, and waived copayment had significantly longer LOS ($p<0.05$). **CONCLUSIONS:** We found that the hospitalizations distribution of bicycle-related injuries differed from patients' demographic characteristics. This finding can be used to promote bicycle safety on preventing injuries through different stakeholders such as health, or transportation, and local governments.

PHS133
VALUE OF A ZERO-COPAY DRUG PROGRAM: IMPLICATION FOR EMPLOYEE WELLNESS PROGRAMS
Pitcavage JM[1], Tomcavage J[2], Jones JB[3], Maeng DD[4]
[1]*The Pennsylvania State University, University Park, PA, USA,* [2]*Geisinger Health Plan, Danville, PA, USA,* [3]*Sutter Health System, Walnut Creek, CA, USA,* [4]*Geisinger Health System, Danville, PA, USA*
OBJECTIVES: There has been an increase in employee wellness programs that include $0 co-pays for basic preventive medications. Although existing literature suggests $0 co-pays may increase adherence, there is uncertainty on how these programs impact total employee health care costs. This study examines the financial impact of $0 co-pays for a large integrated health care system. **METHODS:** The $0 co-pay program included approximately 200 anti-hypertensive, anti-diabetic, and anti-lipid medications for Geisinger Health System (GHS) employees starting in 2007. Data is from the Geisinger Health Plan (GHP) in Pennsylvania for the years 2005-2011. The intervention group (GHS employees who received one or more of the $0 co-pay drugs during the study period) were propensity score matched based on 2 years of baseline data to the comparison group (non-GHS employees with GHP coverage who received the same drugs during the same time). A 2-part multivariate regression model was used to estimate the per member per month (PMPM) dollar effect. A separate multivariate regression model estimated the incremental changes in drug spending associated with the $0 co-pay to calculate the return on investment (ROI). **RESULTS:** The sample included 2,251 GHS employees (intervention group) and 3,857 non-GHS employees (comparison group). The outcome variable was the total medical allowed amount (amount paid by the health plan plus the member out-of-pocket cost) excluding the Rx drug cost. The average medical allowed amount among the GHS employees was reduced by $99 PMPM during the study period. This translated to a 12% savings over the 5-year study period relative to the non-GHS employee group. Considering the foregone copay and the incremental drug spending associated with the $0 co-pay, our results suggest an ROI of 1.7. **CONCLUSIONS:** Implementation of $0 co-pays can potentially lead to net cost savings. Future research needs to examine how programs might achieve cost savings by analyzing its impact on health.

PHS134
HEALTH CARE SPENDING PATTERNS IN HIGH RESOURCE PATIENTS
Pritchard DE[1], Petrilla AA[2], Hallinan S[2], Taylor Jr DH[3], Schabert VF[2], Dubois RW[1]
[1]*National Pharmaceutical Council, Washington, DC, USA,* [2]*IMS Health, Alexandria, VA, USA,* [3]*Duke University, Durham, NC, USA*
OBJECTIVES: The top 5% of health care users based on total expenditures [High Resource Patients (HRP)] account for roughly half of all health care costs. The distribution of health care expenditures for HRP is likely to differ from the overall population. By examining spending patterns of HRP, we can better understand the components of health care expenditures that drive overall spending. **METHODS:** We performed a retrospective analysis of managed care enrollees across the full age and care spectrum, by examining health care claims obtained from the IMS LifeLink Health Plan Claims (HPC) Database. A total of 15,587,257 health plan members met our selection criteria, of which 779,364 were classified as HRP. We compared expenditures during CY2011 by place of service (Outpatient, Inpatient, Pharmacy) and payer type (Commercially insured, Medicare Advantage, and Medicaid managed care) between the full population and HRP. **RESULTS:** Inpatient hospitalization accounted for more direct health care expenditures for HRP (40.0%) than expenditures from pharmacy services (18.1%) or from major outpatient places of service [Ambulatory Surgical Center (ASC) 20.3%, Physician Visits (PV) 4.9%, and Emergency Department (ED) 2.7%]. The share of overall expenditures attributed to inpatient services was higher for HRP compared to the full population (24.6%) while the share of expenditures attributed to pharmacy and outpatient services was reduced (Rx: 21.4%, ASC: 19.7%, PV: 11.7%, ED: 4.5% in the full population). This pattern was observed across payer type. The use of physician-administered pharmaceuticals did not alter this spending pattern. **CONCLUSIONS:** Policy efforts to address health care cost inflation can only succeed if they address HRP, who drive overall health care spending disproportionately. Understanding patterns of spending in this population can help in devising cost reduction strategies. Policy makers should focus on integrated care for HRP, including appropriate use of pharmaceuticals, so as to potentially reduce costly downstream inpatient expenditures.

PHS135
READMISSION TO A DIFFERENT HOSPITAL – RISK FACTORS AND IMPACT ON LENGTH OF STAY
Flaks-Manov N[1], Shadmi E[2], Bitterman H[3], Balicer RD[4]
[1]*Clalit Research Institute, Tel Aviv, Israel,* [2]*University of Haifa, Tel-Aviv, Israel,* [3]*Clalit Health Services Headquarters, Tel-Aviv, Israel,* [4]*Clalit Health Services, Tel Aviv, Israel*
OBJECTIVES: Recent studies show that about 20% of readmissions are to a different hospital than the index admission. In non-same hospital readmissions there exists a risk for fragmentation and loss of information. We aimed to test risk factors for different hospital readmissions (DHR) and whether DHRs are associated with worse outcomes, specifically longer length of stay (LOS) as compared with same hospital readmissions. **METHODS:** A retrospective cohort study of hospitalized members of Clalit Health Services, Israel's largest non-for-profit health care organization. All Clalit members that had at least one hospitalization in an internal medicine department anytime during 2010 and at least one readmission within 30 days were included. A multivariate marginal Cox model using clustering of admissions within patients was employed to test the association between DHR and LOS. **RESULTS:** 16,922 readmitted patients with a total of 27,057 readmissions comprised the study's cohort. Of these, 2,015 (11.9%) had a DHR. Factors that were associated with DHRs: index hospital size (OR: 2.60 and 1.28 for small and medium hospitals, compared to large), younger age (age 18-44, OR=1.7), being male (OR=1.13) and long LOS (8+ days) in the index hospitalization (OR=1.33). Residency in a nursing home and chronic conditions like COPD, Asthma, Disability and Alcohol were associated with a decreased likelihood of DHRs. The mean LOS in same-hospital readmissions was shorter by almost one day as compared with the mean LOS for DHRs, 6.1 (95% CI: 6.0-6.2) vs. 6.9 (95% CI: 6.6-7.2), respectively. One of the strongest predictors of longer LOS was DHR (HR=0.88 $p<0.001$). **CONCLUSIONS:** Adjusting to key confounders, when readmission is to a different-hospital than the index admission, there is increased average LOS. Such an outcome can signify breakdowns in continuity of care and a need to create more seamless care processes when patients are readmitted to a different hospital.

PHS136
THE IMPACT OF PHARMACIST-DELIVERED VACCINATION ON INFLUENZA IMMUNIZATION RATES AND PERCEPTION IN CANADA: AN ECOLOGICAL STUDY
Patel A[1], Marra C[2], Lalji F[2], Law M[3], Lester R[1]
[1]*University of British Columbia, Vancouver, BC, Canada,* [2]*University of Britsih Columbia, Vancouver, BC, Canada,* [3]*University of British Columbia, Vancouver, BC, USA*
OBJECTIVES: In the fall of 2009, two Canadian provinces, BC and Alberta, allowed pharmacists to deliver immunizations (policy provinces), while other provinces across the country either did not change their legislation or implemented this policy after 2010 (non-policy provinces). The purpose of this study was to investigate the impact of pharmacist delivered immunizations on influenza immunization rates. We also evaluated perceptions of individuals around the need for immunization in those provinces that changed policy in 2009 compared to those that did not. **METHODS:** The Canadian Community Health Survey (CCHS) is a nationally representative survey that reports results every two years. With respect to influenza immunization, respondents were asked whether or not they received an immunization in the past year and if not, they were asked if they believe immunization was unnecessary. Hierarchical logistic regression was employed, clustering respondents by province of residence, to examine trends in these two outcomes from 2007/08 (prior to policy implementation) to 2009/10 (after policy implementation). **RESULTS:** Between 2007/08 and 2009/10, the adjusted odds of getting an influenza immunization decreased by 22% ($p<0.01$) in non-policy provinces, but increased by 4% ($p=0.06$) in policy-provinces. The adjusted odds of 'thinking an immunization is unnecessary' increased across Canada, but at a slower rate in provinces that received the policy. The odds of 'thinking an immunization is unnecessary' increased by 27% ($p<0.01$) in non-policy provinces compared to a 6% ($p<0.05$) increase in policy-provinces. **CONCLUSIONS:** Our findings suggest that the pharmacist immunization policy has not yet remarkably improved immunization rates, but may have prevented a more severe decline that was experienced by non-policy provinces. It may have contributed to a smaller increase in perception that immunization is unnecessary relative to non-policy provinces. Further research is needed to ensure that pharmacist delivered immunization improves population level immunization rates.

PHS137
A RISK STRATIFICATION TOOL FOR SCREENING FOR DIABETIC RETINOPATHY AMONG TYPE 2 DIABETIC PATIENTS
Sun Y[1], Paul P[2], Tan N[3], Rajagopalan R[3], Lew Y[4], Heng BH[5]
[1]*National Healthcare Group, Singapore, Singapore, Singapore,* [2]*National Healthcare Group, Singapore, Singapore,* [3]*Tan Tock Seng Hospital, Singapore, Singapore,* [4]*National Healthcare Group Polyclinics, Singapore,* [5]*National Health Care Group, Singapore, Singapore*
OBJECTIVES: The prevalence of diabetes mellitus (DM) is about 11.3% among adult residents in Singapore. Diabetic retinopathy (DR) is the leading cause of blindness among diabetic patients. In Singapore, annual screening for DR using retinal photograph is suggested for all diagnosed DM patients regardless of their risks of developing DR. This study aimed to develop and validate a prognostic model to stratify diabetic patients into different risk groups. **METHODS:** A predictive model was developed using retrospective data. Diabetic patients who did screening in NHG polyclinics in year 2010-2011 were included. Variables included in the model were patient demographics (age, gender, ethnic group); comorbid conditions (hypertension, dyslipidemia; stroke, chronic kidney disease, peripheral cardiovascular disease, peripheral neuropathy); duration of diabetes; average & maximum Hba1c level in last 1 year; treatment agents; BMI and smoking status. Cox regression was used to ascertain the time to development of retinopathy. Stepwise algorithm with Bayesian information Criteria were applied for selecting the best fit model. **RESULTS:** Six predictors significantly predicted the time to develop diabetic retinopathy. Predictors ranked by their relative importance were, average hba1c level in last 1 year, age, stroke, duration of diabetes, dyslipidemia, peripheral neuropathy. Harrell's C concordance statistic was 0.66 (95%CI: 0.63-0.69), and the c-statistics of ROC for 1-year DR-free was 0.73 (95%CI: 0.72-0.75), which showed a good discrimination power of the model. Cox-Snell residual plot showed the predicted time to event fit the actual time. **CONCLUSIONS:** A risk stratification model for predicting the time to develop DR among diabetic patients has been developed and validated to help physicians make decisions on the optimal time for DR screening given the patients risk profile.

PHS138
ASSESSMENT OF MANAGEMENT AND LEADERSHIP SKILLS ,COMPETENCIES AND ABILITY AMONG HEALTH CARE MANAGERS WORKING IN LEVEL 3,4 AND 5 HOSPITALS, NYANZA PROVINCE – KENYA
Mogere DM, Muga R
Great Lakes University of Kisumu, Kisumu, Kenya